

REMARKS/ARGUMENTS

Reconsideration of this application in light of the above amendments is courteously solicited.

The present invention is drawn to a zirconium alloy comprising specific low level additions of tin and niobium. It has been found in accordance with the present invention that the corrosion resistance and mechanical properties of the zirconium alloy depend highly on the kinds and amounts of the alloying elements. Heretofore, it has been found that positive additions of tin have a positive effect on the strength of a zirconium alloy but, correspondingly, a negative effect on the corrosion resistance of a zirconium alloy.

In accordance with the present invention it has been found that by controlling the upper limit of niobium in a zirconium alloy and controlling the upper limit of tin in the zirconium alloy both properties of strength and corrosion resistance can be improved. The examples of the instant specification are replete with examples wherein the niobium content is less than 0.3 wt% and the tin content is less than 0.7 wt%. The Examiner's attention is drawn to Pages 10 and 11 of the instant specification and particularly alloy compositions 1-5 and 7-20. The results on tensile strength of these alloys is set forth in Table 2 starting on Page 22 of the instant specification. The benefit on creep rate is set forth in Table 3 on Page 24 of the instant specification. Thus, the instant specification clearly demonstrates that when the niobium content of the zirconium alloy is between 0.5 to less than 0.3 wt% and the tin composition of the zirconium alloy is between 0.3 to 0.7 wt%, a superior alloy is obtained with respect to strength and corrosion resistance. The prior art reference cited and applied by the Examiner does not teach, disclose, suggest, or render obvious a zirconium alloy composition having a niobium content of less than 0.3 wt%. Nor does the prior art cited by the Examiner have any appreciation for the unexpected results to be obtained in a zirconium alloy having the aforesaid niobium composition in combination with a tin composition of between 0.3 to 0.7 wt%.

In light of the foregoing amendments and arguments, it is submitted that the instant application is in condition for allowance and an early indication of same is respectfully requested.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

If any additional fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,

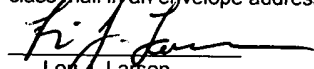
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By

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Date: December 8, 2003

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on December 8, 2003.


Lon J. Larson